



LOCAL CLIMATOLOGICAL DATA ANNUAL SUMMARY WITH COMPARATIVE DATA

PORLAND, MAINE

1971

U.S. DEPARTMENT OF COMMERCE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
ENVIRONMENTAL DATA SERVICE

NARRATIVE CLIMATOLOGICAL SUMMARY

As a rule, Portland has very pleasant summers and falls, cold winters with frequent thaws, and disagreeable springs. Very few summer nights are too warm and humid for comfortable sleeping. Autumn has the greatest number of sunny days and the least cloudiness. Winters are quite severe, but begin late and then extend deeply into the normal springtime.

Heavy seasonal snowfalls, over 100 inches, normally occur about each 10 years. True blizzards are very rare. The White Mountains, to the northwest, keep considerable snow from reaching the Portland area and also moderate the temperature.

Normal monthly precipitation is remarkably uniform throughout the year.

Winds are generally quite light with the highest velocities being confined mostly to March and November. Even in these months the occasional northeasterly gales have usually lost much of their severity before reaching the coast of Maine.

Temperatures well below zero are recorded frequently each winter. Cold waves sometimes come in on strong winds, but extremely low temperatures are generally accompanied by light winds.

The average freeze-free season at the airport station is 139 days. May 12 is the average date of the last freeze (32°) in spring, but this has been as early as April 22 and as late as May 31. The average date of the first freeze in fall is

September 27, with the earliest and latest occurrences on September 17 and October 10. The freeze-free period is longer in the City proper, but may be even shorter at susceptible places further inland.

The Portland City Airport is located 2-3/4 miles west of the site of the former city office. The surrounding country is mostly open, rolling and sloping generally toward the Fore River, a body of brackish water about 1,000 feet wide at a distance of about 1/2 mile from the station and forming one boundary (north through east) of the field. The airport is about 5-1/2 miles west-northwest of the open ocean. A slight rise reaching an elevation of 100 feet, lying northwest of the field, cuts down the wind slightly from that direction. The older portion of the City is situated on a hill rising abruptly from sea level to 170 feet, 1-1/2 miles east of the airport and on the opposite side of the Fore River. A line of low hills southeast of the airport, near the ocean, which reach a maximum height of 160 feet, shuts off sight of the ocean from the airport. Sebago Lake with an area of 44 square miles is situated about 15 miles to the northwest and 45 miles farther are the White Mountains, averaging 3,000 to 5,000 feet in height.

Daily maximum temperatures at the present airport site agree closely with those near the former intown office, but minimum temperatures on clear, quiet mornings range as much as 15° lower at the airport.

METEOROLOGICAL DATA FOR THE CURRENT YEAR

Station: PORTLAND, MAINE PORTLAND INTERNATIONAL JETPORT Standard time used: EASTERN Latitude: 43° 39' N Longitude: 70° 19' W Elevation (ground): 43 feet Year: 1971

Month	Temperature						(Base 65°)	Precipitation						Relative humidity				Wind &						Number of days						Average daily solar radiation - langleys													
	Averages			Extremes				Total	Snow, Ice pellets			Total	Greatest in 24 hrs.	Hour	01	07	13	19	Resultant	Speed	Average speed	Direction #	Speed	Direction #	Speed	Direction #	Speed	Percent of possible sunshine	Sunrise to sunset	Maximum	Minimum												
	Daily maximum	Daily minimum	Monthly	Highest Date	Lowest Date	Heating Cooling	Date	Total	Date	Total	Greatest in 24 hrs.	(Local time)	Hour	01	07	13	19	Direction	Speed	Direction	Speed	Direction	Speed	Direction	Speed	Clear	Partly cloudy	Cloudy	Precipitation	0.1 inch or more	1.0 inch or more	Thunderstorms	Heavy fog										
JAN	23.1	1.2	12.2	40	5	-26	19	1634	0	2.25	0.56	29-30	17.2	4.0	23	70	74	58	65	28	6.0	10.1	30	64	4.5	16	6	9	10	0	0	22	31	16	170								
FEB	31.2	12.6	21.9	46	25	-25	3	1202	0	6.76	1.75	B-9	35.6	10.9	7-8	76	79	65	70	30	2.8	9.8	29	55	6.7	6	7	15	15	0	0	27	4	28	348								
MAR	39.1	24.1	31.6	50	29	10	13+	1028	0	4.74	2.29	3-4	24.7	8.4	11	67	68	56	62	30	5.1	11.2	28	61	6.1	9	10	12	1	0	0	0	0	0	316								
APR	48.9	34.2	41.6	61	20+	21	9	695	0	1.86	0.76	7	9.2	8.7	7	79	75	61	71	32	2.7	10.4	29	46	7.2	4	5	18	4	0	0	0	0	0	380								
MAY	61.5	43.9	52.7	76	11	35	15+	373	0	4.09	1.71	3	0.0	0.0	88	81	65	74	23	1.4	9.2	29	40	7.2	6	5	20	20	0	0	0	0	0	592									
JUN	75.8	52.7	64.3	96	30	39	2	81	66	1.09	0.43	3	0.0	0.0	79	69	49	66	23	2.8	9.3	24	SW	5.3	9	15	6	4	0	0	0	0	0	592									
JUL	80.5	57.5	69.0	93	1	48	13+	3	135	3.14	1.13	29-30	0.0	0.0	89	76	56	72	22	3.9	8.8	30	W	1	68	6.2	5	12	14	9	5	1	0	0	514								
AUG	79.6	58.1	68.9	90	10+	42	25	20	149	3.24	1.37	27-28	0.0	0.0	87	80	54	72	25	3.6	9.5	31	SE	28	70	5.3	10	12	9	10	0	0	0	0	0	458							
SEP	71.2	51.3	61.3	90	5	35	25	147	43	3.55	1.43	13-14	0.0	0.0	88	86	63	79	25	1.3	8.4	36	E	17	61	6.2	9	14	9	7	1	0	0	0	0	316							
OCT	62.3	42.7	52.5	83	2	30	13	381	1	3.95	2.78	10-11	0.0	0.0	87	87	64	83	23	1.6	7.9	28	NW	11	60	6.6	5	12	14	7	1	0	0	0	0	235							
NOV	44.7	26.1	35.4	71	1	15	10	878	0	4.13	1.65	29-30	6.2	25	76	77	54	65	33	4.9	9.0	30	E	30	51	5.6	8	17	11	1	0	0	0	0	147								
DEC	36.5	18.0	27.3	54	11	-3	31	1164	0	2.85	0.66	6-7	12.5	6.2	30-31	72	74	60	67	31	5.2	10.1	34	NW	25	56	5.6	9	10	12	15	0	0	0	0	0	121						
YEAR	54.5	35.2	44.9	96	JUN.	30	-26	19	7606	394	41.65	2.78	OCT.	10-11	105.4	10.9	FEB.	7-8	80	77	59	71	28	2.8	9.5	38	E	MAR.	44	59	6.1	96	109	160	118	24	16	49	5	49	156	24	322

† DATA CORRECTED AFTER PUBLICATION OF THE MONTHLY ISSUE.

Also delete "day with heavy fog". Col. 8, of the 11th of the March issue.

NORMALS, MEANS, AND EXTREMES

Month	Temperature						Normal heating degree days (Base 65°)	Precipitation						Relative humidity				Wind &						Mean number of days						Average daily solar radiation - langleys														
	Normal			Extremes				Total	Snow, Ice pellets			Total	Greatest in 24 hrs.	Year	01	07	13	19	Mean speed	Pervailing direction	Fastest mile	Sunrise to sunset	Clear	Partly cloudy	Cloudy	Precipitation	0.1 inch or more	1.0 inch or more	Thunderstorms	Heavy fog	Max.	Min.												
	Daily maximum	Daily minimum	Monthly	Record highest	Record lowest	Year	Normal total	Maximum monthly	Year	Maximum monthly	Year	Mean total	Maximum monthly	Year	01	07	13	19	Year	Speed	Direction #	Speed	Direction #	Speed	Direction #	Speed	Clear	Partly cloudy	Cloudy	Precipitation	0.1 inch or more	1.0 inch or more	Thunderstorms	Heavy fog	Max.	Min.								
(a)	(b)	(b)	(b)	31	31	1945	(b)	4.37	9.41	1958	0.76	1970+	2.04	1966	18.4	38.2	1966	14.2	1944	76	78	62	71	9.2	N	50	SE	1951+	55	6.1	10	7	14	11	5	0	2	0	17	30	6	160		
J	31.8	11.7	21.8	64	1950	-26	1971	1339	4.37	9.41	1958	0.76	1970+	2.04	1966	18.4	38.2	1966	14.2	1944	76	78	60	70	9.2	N	58	SE	1952+	59	6.0	9	7	12	10	10	0	2	0	12	27	5	238	
F	33.5	12.1	22.8	64	1957	-39	1963	1182	3.80	6.78	1971	1.26	1968	3.21	1968	21.0	61.2	1969	21.5	1969	78	70	70	70	9.5	W	76	NE	1947	58	6.2	9	8	14	11	4	* 3	0	4	27	1	339		
M	40.7	22.0	31.1	86	1946	-21	1950	1042	4.34	9.47	1953	0.81	1965	3.47	1951	14.1	46.6	1956	11.5	1964	76	75	59	70	10.0	W	76	NE	1947	58	6.2	9	8	14	11	4	* 3	0	4	27	1	339		
A	52.5	32.4	42.5	85	1957	8	1954	675	3.73	6.40	1961	0.71	1941	2.43	1954	3.0	15.7	1967	8.7	1971	80	74	56	70	9.9	S	57	S	1946	57	6.4	8	8	14	12	1	3	0	* 15	0	411			
H	64.2	41.7	53.0	92	1944	23	1956	372	3.41	7.74	1940	0.49	1965	2.33	1952	0.3	7.0	1945	7.0	1945	85	85	57	71	9.2	S	49	NW	1969	61	6.2	8	10	12	11	0	4	5	1	0	535			
J	73.1	51.1	62.1	97	1941	33	1944	111	3.18	6.23	1967	0.70	1941	5.58	1967	0.0	0.0	1948	88	78	59	74	8.2	S	45	NW	1969	61	6.2	8	10	12	11	0	4	5	1	0	535					
J	79.5	56.7	68.1	98	1949	40	1965	12	2.86	5.87	1951	0.61	1965	2.23	1947	0.0	0.0	1951	90	80	59	75	7.7	S	44	W	1941	65	6.1	8	11	12	9	0	4	7	2	0	0	531				
A	78.4	55.2	66.8	100	1948	33	1965	53	2.42	8.30	1940	0.27	1947	4.18	1946	0.0	0.0	1948	90	83	59	78	7.5	S	69	E	1954	65	5.7	10	11	10	8	0	4	6	0	0	466					
S	70.2	47.2	58.7	95	1945	23	1941	195	3.52	9.81	1954	0.30	1948	7.49	1954	T	T	1959	98	86	60	80	7.8	S	62	E	1960	62	5.6	11	8	11	8	0	2	6	0	0	373					
O	59.8	37.4	48.6	88	1963	18	1966+	508	3.20	12.27	1962	0.26	1947	7.71	1962	0.3	3.8	1969	9.6	1969	88	85	60	79	8.5	N	45	N	1963+	58	5.6	11	8	11	9	0	1	0	0	263				
N	47.6	28.6	38.1	73	1960	5	1940	807	4.17	9.81	1963	2.10	1946	3.39	1951	3.1	15.3	1968	8.5	1961	83	84	66	77	8.8	W	76	NE	1945	46	6.7	8	7	15	12	1	3	0	1	0	148			
D	35.3	16.3	25.8	62	1962	-21	1963	1215	3.85	9.69	1969	0.98	1955	3.82	1970	15.2	54.8	1970	22.8	1970	79	80	62	74	9.0	S	62	SE	1957	54	6.0	10	7	14	11	4	2	6	0	0	12	29	3	139
YR	55.6	34.4	45.0	100	1948	-39	194																																					

AVERAGE TEMPERATURE

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual
1932	32.6	24.8	31.4	44.2	55.8	63.2	68.4	69.9	62.2	52.6	39.0	32.8	48.1
1933	32.2	29.0	31.6	44.6	55.2	64.6	67.9	61.0	50.4	35.2	21.2	46.6	
1934	23.6	14.0	31.6	44.6	55.2	63.0	69.6	64.7	62.8	47.8	41.5	25.0	45.4
1935	17.9	23.5	33.4	43.4	53.5	63.4	70.8	69.0	59.3	49.8	42.4	24.4	45.9
1936	24.6	19.9	38.2	42.4	55.2	62.9	66.6	67.2	59.4	50.4	35.9	31.0	46.1
1937	31.6	30.4	31.3	43.4	55.2	63.8	70.6	72.4	61.0	49.4	40.5	26.8	48.1
1938	23.8	26.6	33.8	44.6	52.4	64.6	68.3	71.1	58.7	53.2	42.0	31.0	47.5
1939	23.6	24.8	29.2	40.6	53.2	61.1	67.9	69.7	60.2	49.7	37.0	29.0	45.5
1940	19.0	27.1	30.4	40.4	52.7	60.4	68.5	65.8	60.0	48.0	37.4	24.4	44.5
1941	17.1	24.4	27.3	46.4	55.0	63.8	68.0	64.2	58.8	48.2	39.9	29.4	45.2
1942	20.8	22.1	36.0	44.6	54.8	62.4	68.6	63.3	58.9	49.2	36.2	23.0	45.1
1943	17.6	22.9	29.6	34.8	52.8	64.7	68.6	65.4	57.4	49.1	37.4	21.0	43.7
1944	22.7	21.1	29.1	38.9	55.7	61.2	68.5	70.0	59.5	47.6	38.2	23.6	44.7
1945	16.0	22.0	38.6	47.0	49.5	60.9	67.1	66.4	60.6	45.8	37.8	22.0	44.8
1946	19.8	19.2	39.5	40.4	51.6	61.8	65.5	64.3	60.8	51.0	40.6	26.6	45.1
1947	21.5	24.6	32.5	41.2	51.4	60.2	70.6	68.6	59.4	55.3	36.2	22.8	45.4
1948	15.6	18.2	30.8	41.4	50.0	59.5	70.2	69.4	60.3	47.8	42.2	22.8	44.6
1949	26.6	26.2	33.2	45.6	53.8	64.7	70.8	69.0	57.2	51.6	36.3	30.0	47.1
1950	26.9	18.3	26.4	40.9	52.8	62.4	68.0	65.7	54.5	49.2	41.5	29.4	44.7
1951	25.5	27.4	33.2	45.6	53.9	59.9	68.7	66.4	59.2	49.0	35.7	25.6	45.8
1952	23.4	26.0	31.7	43.8	51.6	65.0	71.7	67.3	59.4	46.6	37.7	30.1	46.2
1953	28.5	27.6	34.4	41.1	53.8	62.5	67.8	65.6	58.9	49.9	41.3	31.1	47.3
1954	17.9	29.2	31.6	43.0	51.2	61.3	65.9	63.9	56.4	51.7	38.6	27.4	44.9
1955	22.3	26.7	30.4	43.7	56.0	62.6	71.0	68.5	57.1	48.5	36.1	18.2	45.1
1956	27.4	24.6	25.6	40.0	48.2	62.0	65.1	65.5	55.1	48.0	38.0	27.5	43.9
1957	13.9	26.8	33.6	44.6	54.5	64.1	67.1	63.3	60.3	49.6	40.7	32.9	45.9
1958	26.6	19.0	36.2	43.8	50.9	58.1	67.0	65.5	58.6	45.8	38.6	18.0	44.1
1959	21.3	18.1	30.7	40.4	56.2	67.4	67.6	61.1	56.9	48.0	38.6	29.7	45.3
1960	23.7	28.8	27.4	42.4	54.4	63.7	66.7	66.2	58.8	46.2	40.7	22.2	45.1
1961	15.3	24.2	30.1	41.9	51.1	62.6	65.8	66.3	64.1	50.8	39.7	26.1	44.8
1962	20.6	18.1	33.4	42.0	51.1	62.3	64.0	64.8	56.1	47.0	35.1	23.8	43.3
1963	23.0	17.4	31.9	42.4	52.5	63.5	68.9	62.9	54.8	52.3	41.7	15.6	44.0
1964	24.4	23.0	31.9	40.9	54.8	62.6	67.4	61.1	55.6	47.1	36.2	25.3	44.2
1965	19.0	21.6	33.3	41.1	54.8	63.1	66.3	58.0	47.0	36.6	27.9	4.7	45.1
1966	22.3	22.6	32.7	39.9	50.4	63.1	67.7	66.2	56.2	47.1	41.1	26.7	44.7
1967	21.7	24.5	31.5	47.3	53.8	67.5	68.6	59.9	47.7	34.8	41.6	27.8	43.3
1968	16.6	19.2	32.2	45.1	51.0	60.0	70.4	66.4	61.7	52.6	36.7	25.2	44.8
1969	24.2	25.0	31.1	43.0	52.8	62.6	67.6	71.3	60.9	48.9	41.1	28.7	46.5
1970	16.7	25.4	32.4	43.6	55.7	63.5	70.1	68.8	61.0	51.7	41.3	19.6	45.8
1971	12.2	21.9	31.6	41.6	52.7	64.3	69.0	68.9	61.3	52.3	35.4	27.3	44.9
RECORD													
MEAN	22.4	23.4	32.3	42.8	53.2	62.5	68.2	66.6	59.6	49.7	38.6	26.9	45.5
MAX	30.8	32.0	40.0	51.1	62.0	71.6	77.2	75.3	68.4	58.2	46.0	34.5	53.9
MIN	14.0	14.8	24.5	34.5	44.3	53.3	59.1	57.8	50.7	41.1	31.1	19.2	37.0

TOTAL DEGREE DAYS

PORTLAND, MAINE													
Season	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	Total
1932-33	18	0	124	384	782	996	1018	1007	1006	666	310	83	6394
1933-34	46	10	148	451	896	1360	1430	1430	1430	612	290	110	7362
1934-35	6	70	86	530	706	1239	1460	1166	979	648	364	108	7362
1935-36	18	18	185	470	679	1260	1252	1308	830	678	322	78	7098
1936-37	35	45	186	452	1056	1036	970	1044	650	426	322	7224	6718
1937-38	7	9	180	483	735	1179	1276	1073	968	615	390	84	7001
1938-39	18	16	196	370	690	1054	1284	1126	1111	730	372	140	7107
1939-40	20	6	170	472	838	1118	1424	1100	1070	738	381	152	7489
1940-41	23	68	172	527	830	1256	1484	1138	1165	556	314	138	7675
1941-42	12	89	216	502	752	1103	1360	1207	897	610	328	122	7224
1942-43	32	71	202	494	864	1297	1473	1179	1099	804	377	82	7974
1943-44	29	56	240	492	827	1366	1315	1270	1113	780	310	174	7972
1944-45	18	36	192	542	804	1287	1516	1201	818	542	480	174	7612
1945-46	31	53	176	593	819	1330	1401	1285	790	735	415	163	7791
1946-47	64	67	146	436	735	1187	1349	1129	1010	711	426	149	7449
1947-48	2	38	223	320	863	1308	1531	1355	1060	707	467	184	8058
1948-49	14	22	160	367	768	1089	1184	980	858	535	358	86	6775
1949-50	11	27	239	419	862	1081	1176	1001	912	718	371	111	7508
1950-51	26	45	312	484	699	1096	1220	1046	976	574	347	171	6995
1951-52	10	131	495	870	1219	1280	1123	1023	629	406	47	127	7324
1952-53	6	24	185	564	813	1073	1124	1041	940	620	341	129	6860
1953-54	18	69	226	461	708	982	1454	998	928	654	519	148	7161
1954-55	34	72	255	424	785	1160	1315	1065	629	321	124	7217	7821
1955-56	41	61	242	532	845	1145	1315	1183	994	745	449	108	7650
1956-57	19	29	264	549	710	1101	1254	1230	1187	699	544	92	7585
1957-58	23	86	184	468	721	986	1183	1283	885	630	430	206	7089
1958-59	28	42	210	586	782	1449	1349	1305	953	593	295	187	7399
1959-60	2	38	181	522	785	1090	1273	1128	975	710	320	125	7821
1960-61	14	39	211	575	723	1317	1531	1140	1075	688	427	92	7825
1961-62	66	104	433	751	1196	1369	1307	973	685	438	107	149	7480
1962-63	68	52	272	529	859	1266	1277	1327	1019	673	379	108	7829
1963-64	31	94	299	595	611	1497	1521	1214	1020	718	324	111	6645
1964-65	18	24	293	549	657	1257	1352	1121	973	570	149	161	89.3
1965-66	0	0	0	0	0	1	10.8	11.7	3.4	0.0	0.0	0.0	61.0
1966-67	0	0	0	0	0	0	0	0	0	0	0.0	0.0	41.9
1967-68	0	0	0	0	0	0	0	0	0	0	0.0	0.0	56.2
1968-69	0	0	0	0	0	0	0	0	0	0	0.0	0.0	69.1
1969-70	0	0	0	0	0	0	0	0	0	0	0.0	0.0	89.3
1970-71	7	14	159	408	704	1400	1634	1202	1028	695	373	81	7705
1971-72	3	20	147	381	874								

STATION LOCATION

PORTLAND, MAINE

Location	Occupied from	Occupied to	Airlane distance and direction from previous location	Latitude North	Longitude West	Elevation above Sea level								Remarks	
						Ground at tem- perature site	Wind instruments	Extreme thermometers	Psychrometer	Telepsychrometer	Tipping bucket rain gage	Weighing rain gage	8" rain gage	Hygrometer	
Fort Preble	1-1820	12-1836		43° 39'	70° 14'	53									Surgeon General Station.
Fort Preble	10-1840	8-1845		43° 39'	70° 14'										Surgeon General Station.
Fort Preble	1-1849	12-1853		43° 39'	70° 14'										Surgeon General Station.
Portland	1856	1859		43° 39'	70° 15'										Cooperative Station.
Fort Preble	1865	1871		43° 39'	70° 14'										Smithsonian Institute Station.
<u>CITY</u>															
4 Exchange Street	7/15/71	9/30/73		43° 39'	70° 15'	30	?	40				?			
Boyd's Block, Middle & Exchange Streets	9/30/73	12/01/74	450 ft. NW	43° 39'	70° 15'	51	?	50				?			
Custom House, Fore St.	12/01/74	7/01/85	450 ft. E	43° 39'	70° 15'	32	82	28			71				
First National Bank 57 Exchange Street	7/01/85	12/04/40	350 ft. WNW	43° 39'	70° 15'	47	117*	81	#81	075	77				0 - 74 feet 1/94 to 4/97; * - 89 feet 5/22/93 to 11/28/99; # - Added January 1889.
<u>AIRPORT</u>															
Administration Building† Portland City Airport††	12/03/39	Present	2.75 miles West of City Office	43° 39'	70° 19'	d43	a20	e6	e6	b3	6	3	c4	100	a - 36 feet to 6/41; 61 feet to 5/43; 43 feet to 8/48, and 55 feet to 10/6/64. b - 24 feet to 6/48. c - Commissioned 1200 feet ESE of thermometer site 2/2/65. d - 61 feet to 2/2/65 and 47 feet to 12/10/69. e - Standby status after 2/2/65. f - Moved 850 feet SE 12/10/69.
† General Aviation Terminal effective Oct. 1968						f20									
††Portland International Jetport, Sept. 1969.															

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